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Canada. National Development Bureau.

Government
Publications

MANITOBA
SASKATCHEWAN
ALBERTA

NATURAL RESOURCES

A BRIEF COMPILATION BEARING ON THE NATURAL RESOURCES OF THE PRAIRIE PROVINCES

Natural Resources Intelligence Branch
Department of the Interior
Ottawa, Canada
1919

60934—1

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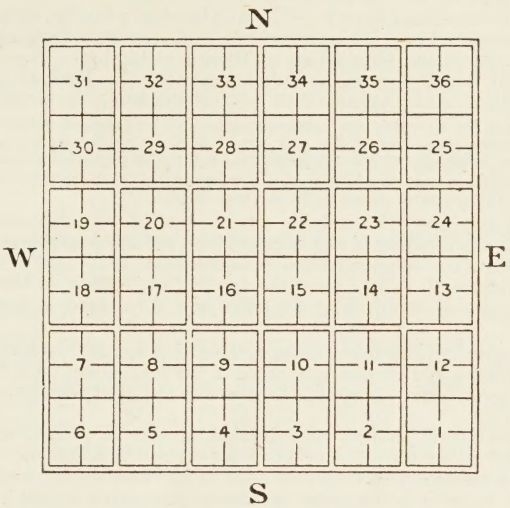
SYSTEM OF SURVEY OF DOMINION LANDS

Dominion Lands are laid off in square townships containing thirty-six sections of as nearly one mile square as the convergence of meridians permits. Such sections are bounded and numbered as shown in the township diagram below.

PLAN OF A TOWNSHIP



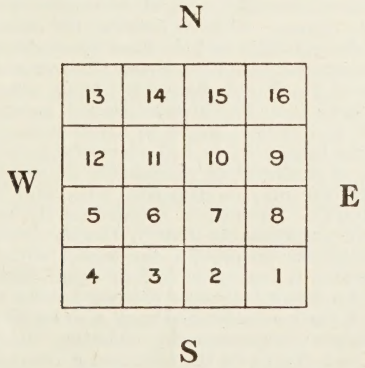
A section contains six hundred and forty acres. Each section is divided into four quarter-sections containing one hundred and sixty acres each.

Road allowances are provided as indicated by double lines on the above diagram, namely: running north and south between each section; running east and west, along the township lines and the lines two miles distant therefrom.

Townships are numbered consecutively from south to north. Each row of townships thus formed is given a range number. The ranges start from a Principal meridian and are numbered consecutively. The first meridian is a few miles west of Winnipeg. Ranges number from this meridian as a starting point, both eastward and westward. In regard to all other meridians, ranges number westward only.

It will be seen that when numbers for the township, range, and meridian are known, the exact location of the township is known.

PLAN OF A SECTION



Each section is deemed to be divided into forty-acre areas, known as legal subdivisions and numbered and bounded as in the diagram above.

SYNOPSIS OF CANADIAN NORTHWEST LAND REGULATIONS

What Land Available.—All surveyed agricultural Dominion Lands in Manitoba, Saskatchewan, Alberta, and 3,500,000 acres in northern British Columbia, known as "Peace river block," which are not disposed of and not reserved or occupied, are open to homestead entry.

Islands are reserved from entry.

An entry does not include the Mineral or Water Rights.

Lands within 15 miles of a railway are reserved for Soldier Settlement.

Who may Make Homestead Entry.—The sole head of a family, or any male over eighteen (18) years old, may homestead one (1) quarter-section of available Dominion land in Manitoba, Saskatchewan, Alberta, or Peace river block in British Columbia. Applicant must appear in person at the Dominion Lands Agency or Sub-Agency for the district. Entry by proxy may be made at any Dominion Lands Agency (but not Sub-Agency), on certain conditions.

NOTE.—No application for an entry for a homestead shall be granted unless the person making the application was at the commencement of the war, and has since continued to be a British subject or a subject of a country which is an ally of His Majesty, or a subject of a neutral country, and unless he establishes the same to the satisfaction of the Minister of the Interior. This does not apply to members of the Canadian Expeditionary Forces naturalized since the war began.

An Agent may reserve one (1) available quarter-section as a homestead for a minor over seventeen (17) years of age until he is eighteen (18), on certain conditions.

Where Entry is made.—Application for homestead entry may be made by a person eligible under the provisions of "The Dominion Lands Act," either at the Land Agency for the district in which the land is situated, or at the office of a Sub-Agent authorized to transact business in the district.

Duties.—Six (6) months' residence upon and cultivation of the land in each of three (3) years. A homesteader may live within nine miles of his homestead on a farm of at least eighty (80) acres, on certain conditions. A habitable house is required, except where residence is performed in the vicinity.

The area of cultivation is subject to reduction in case of rough, scrubby or stony land. Live stock may be substituted for cultivation under certain conditions.

When to Begin Residence.—A homesteader is allowed six (6) months from the date of his entry within which to perfect the same by taking possession of the land and beginning his residence duties. Any entry not so perfected within that period is liable to cancellation.

SYNOPSIS OF SOLDIER SETTLEMENT ACT

The Soldier Settlement Act applies to soldiers who have been honourably discharged or left the forces after having served in an actual theatre of war, or outside the country in which they enlisted, or in the case of the Canadian Expeditionary Force, after having served in Canada only and having received injury or disability due to service for which pension has been granted; or the widows of any soldiers who died on such service.

The Soldier Settlement Board is invested with authority and provided with funds for the purchase of lands situate in any part of Canada which are suited for immediate settlement by soldiers. They are also empowered to purchase stock, equipment, and building material for sale to soldier settlers. Sales are to be at cost price to the Board. In every case, before assistance from the Board can be obtained, the soldier must pass a qualification council, which acts in an advisory capacity to the Provincial Supervisor of the Board, at least one of which is established in every province, which qualification council determines whether or not the applicant is reasonably certain to succeed as a farmer. As far as possible, the Board desires that the soldier shall select his own land. If the soldier qualifies and the land selected is deemed such as will enable him, by proper application, to earn for himself a living thereon and to pay for it, the purchase is made through the assistance of the Board, the soldier being asked to pay ten per cent of the purchase price in cash. Not more than $4,500 must be left outstanding and owing the Board at the time of sale. Provision is, however, made to cover cases of men who may not be able to pay the ten per cent, but who have already had successful farming experience in Canada and who are otherwise so qualified or equipped as to specially fit them as farmers. In these cases the whole or part of the ten per cent may be dispensed with, and, consequently, a balance may be left owing by them up to $5,000. The rate of interest on the balance is to be five per cent, and all is to be repayable on the amortization plan by twenty-five annual instalments.

The Board is also given authority to provide the soldier with implements and stock up to a maximum value of $2,000, which is repayable in four equal annual instalments, commencing in the third year, there being no interest charges thereon for the first two years. The rate of interest shall be 5 per cent. A further assistance may also be given the soldier by way of an advance up to $1,000 for permanent improvements, including the value of building materials supplied. This advance shall be a charge on the land and is repayable on the amortization plan in twenty-five equal annual instalments with interest at five per cent per annum.

While the amounts owing the Settlement Board remain unpaid, the land and goods supplied are fully protected from seizure to the prejudice of the Board, nor can sales or charges be made without the Board's consent. The crops grown are protected from seizure to the extent of the obligations due the Board, or to fall due within a reasonable time after seizure.

The soldier who is eligible by reason of military service to benefit under the Act, may make entry in the prescribed manner and have reserved from any available Dominion lands, prior to the decision of the qualification committee, but on the recommendation of the provincial supervisor, what land he desires, but he shall not take possession or have any rights in respect thereto until the final decision of the Board is given.

If a soldier having obtained loans, etc. through the Board fails to comply with all the agreements entered into by him with the Board, he may have such agreements cancelled and the property revested in the Board absolutely free and discharged of all rights and claims and at no loss or expense to the Board.

For detailed information with regard to the Soldier Settlement Act and to the settlement of soldiers on the land, or for the addresses of the various provincial supervisors, apply to the Secretary, Soldier Settlement Board, Ottawa.

SYNOPSIS OF REGULATIONS GOVERNING THE GRANTING OF GRAZING LEASES

Grazing leases of vacant Dominion Lands unfit for agricultural purposes may be issued to British subjects for a period of ten (10) years. The lands covered shall not be open to settlement during continuance of the lease.

No person or company shall be permitted to hold under lease more than 12,000 acres.

The lessee shall, within each of the three (3) years from the date of the lease, place upon the tract of land leased not less than one-third of the whole number of stock which is required to be placed upon the leasehold, namely, one (1) head of cattle or five (5) head of sheep, for every thirty (30) acres of land covered by the lease, and shall during the rest of its term, maintain stock thereon in that proportion, and at least 25% of the stock shall be breeding stock.

The lessee shall be required to enclose his leasehold by a suitable fence.

The lessee shall pay an annual rental at the rate of ~~two~~ cents ~~(2c)~~ per acre for every acre covered by the lease, payable half-yearly in advance.

The lessee shall be entitled to the hay on his leasehold and he may cultivate any portion of his leasehold for the purpose of growing winter feed for his stock, but shall not have the right to dispose of any such feed or hay by barter or sale.

Yearly grazing permits are issued on School Lands expiring the 1st of April following the date of issue, but are renewable at the option of the Department provided application for renewal, accompanied by the rental for the following year, is made before the 1st of February of each year. All applications for grazing permits or renewals thereof should be made direct to the Agent of Dominion Lands for the district in which the land is situated. The yearly rental is six cents per acre in Manitoba and four cents per acre in Saskatchewan and Alberta.

SYNOPSIS OF REGULATIONS GOVERNING THE GRANTING OF TIMBER BERTHS

Timber Berths shall be disposed of by public auction at the office of the Dominion Timber Agent for the district in which the berths are situated.

Before any parcel of timber is offered for sale it shall be surveyed by a duly qualified Dominion Land Surveyor into berths of an area not exceeding twenty-five (25) square miles.

No berth shall be disposed of until notice of the sale has been given for a period of not less than sixty (60) days in a newspaper published in the district in which the berth is located and also in a newspaper having a general circulation in the province.

Purchases to the amount of One Thousand Dollars ($1,000) or under shall be paid in cash at the time of sale. Purchases over One Thousand Dollars ($1,000) shall be paid part cash and balance covered by notes bearing interest at rate of five per cent (5%) per annum.

The licensee shall be entitled to a renewal of his license from year to year subject to the regulations in force at the time renewal is made, while there is on the berth a sufficient quantity of merchantable timber as described in the license.

The licensee shall pay an annual ground rent of Five Dollars ($5) per square mile, except for lands west of Yale, British Columbia, in which case the rent shall be five cents (5c) per acre. The licensee shall also pay one-half the cost of fire-protecting his berth.

Timber for Homesteaders:—Any occupant of a homestead quarter-section having no suitable timber of his own may obtain a free permit to cut a stated quantity of building timber, fencing timber or fuel as he may require for use on the land he owns and occupies. If he requires a further quantity for the purpose mentioned he must pay the dues specified in clause (a) of section 42 of the regulations.

SYNOPSIS OF REGULATIONS GOVERNING THE GRANTING OF MINERAL RIGHTS

Coal:—Coal mining rights may be leased for a period of twenty-one years (21) years renewable at an annual rental of One Dollar ($1) an acre. Not more than 2,560 acres shal be leased to one applicant. A royalty at the rate of five cents (5c) per ton shall be collected on the merchantable coal mined.

A fee of Five Dollars ($5) shall accompany each application for a lease. This fee will be refunded if the rights applied for are not available, but not otherwise.

Petroleum and Natural Gas:—The Petroleum and natural gas rights which are the property of the Crown may be leased to applicants at a rental of twenty-five cents (25c) per acre, for the first year, and for each subsequent year a rental at the rate of fifty cents (50c) an acre, payable yearly in advance. The term of lease shall be twenty-one (21) years, renewable for a further term of twenty-one (21) years.

Application for a lease shall be made by the applicant in person to the Agent of Dominion Lands for the district in which the rights applied for are situated, or to a sub-agent for such district for transmission to the Agent. In case the location is in unsurveyed territory it shall be staked out by the applicant in person.

A fee of Five Dollars ($5) and the rental for the first year shall accompany each application for a lease. This fee and rental will be refunded if the rights applied for are not available, but not otherwise.

Placer Mining:—Any person over eighteen (18) years of age may enter for mining purposes, locate, prospect and mine for minerals upon any lands the right to which entry, prospecting and mining is vested in or reserved to the Crown, except lands within the boundaries of a city, town or village, as defined by any provincial law or ordinance or specified by the Minister, or lands occupied by a building, or within the curtilage of a dwelling house, or lands lawfully occupied for placer mining purposes, or which form part of an Indian or other reservation.

An application for a grant of a claim shall be filed with the mining recorder within ten (10) days after the location thereof, if the claim is located within ten (10) miles of the mining recorder's office.

One (1) extra day shall be allowed for every additional ten (10) miles or fraction thereof.

Limestone, Granite, Slate, Marble, Gypsum, Marl, Gravel, Sand, Clay or any Building Stone:—Dominion lands containing limestone, granite, slate, marble, gypsum, marl, gravel, sand, clay or any building stone may be leased by the Minister at an annual rental of One Dollar ($1) per acre. payable yearly in advance, for the purpose of quarrying out and removing therefrom stone or other material mentioned herein.

The term of the lease shall be twenty-one (21) years, renewable for a further period of twenty-one (21) years.

The maximum area of a quarrying location shall be forty (40) acres, and no person shall be allowed to locate more than one (1) location.

Application for a location comprising surveyed land shall be filed by the locator in person with the Agent of Dominion Lands for the district in which the location is situated. In unsurveyed territory no location is to be staked out.

A fee of Five Dollars ($5) shall accompany each application for a lease. This fee will be refunded if the rights applied for are not available, but not otherwise.

Quartz Mining:—Any person having discovered mineral in place may locate a claim 1,500 by 1,500 feet by staking out the same with three (3) legal posts, one at each end of the location line, and a third at the spot where the mineral in place has been discovered. The two (2) location posts must have the name of the claim, a description of the ground, date of location and locator's full name written legibly upon them. The discovery post shall be marked "Discovery Post," and No. 1 post marked "Initial Post."

The claim shall be recorded within fifteen (15) days if located within ten (10) miles of a Mining Recorder's office; one (1) additional day allowed for every additional ten (10) miles or fraction thereof. The fee for recording a claim is Five Dollars ($5.)

At least One Hundred Dollars ($100) must be expended on the claim each year or paid to the Mining Recorder in lieu thereof. When Five Hundred Dollars ($500) has been expended or paid, the locator may, upon having a survey made, and upon complying with other requirements, lease the land, and permission may be granted to group any number of adjoining claims up to eight (8) in number for representation work, upon taking out a certificate of partnership before the commencement of the work.

If any person satisfies the recorder that he is about to undertake a bonafide prospecting trip and files a power of attorney from any number of persons not exceeding two (2) authorizing him to stake claims for them in consideration of their having enabled him to undertake the trip, he may stake one (1) claim in the name of each such person upon any lode or vein which he may discover.

There are also regulations governing the issue of leases to dredge for minerals in the beds of rivers, and regulations governing the leasing of deposits of potash on Dominion lands.

Clay:—Clay locations are leased upon the condition that a plant suitable for the manufacture of brick or other clay products shall be erected within two (2) years from the date of the

lease, and further that in each year of the term of the lease after the second year there shall be produced ready for shipment not less than One Hundred Thousand (100,000) bricks or their equivalent in some other form.

SYNOPSIS OF THE PROVISIONS OF THE IRRIGATION ACT FOR THE GUIDANCE OF APPLICANTS FOR WATER RIGHTS

Preliminary Surveys.—In the majority of cases where water is to be diverted from any source, to be used for domestic or irrigation purposes, a preliminary survey is required to prove the scheme feasible before an application is filed for a water right. In most instances the owners of land, whose property it may be necessary to cross will not offer any objection, but should any objection be offered the applicant may obtain a license from the Commissioner of Irrigation to make such preliminary survey.

Memorials.—Every applicant for a water right for any of the purposes authorized by the Irrigation Act is required to file a memorial containing information as to the character and location of the works to be constructed and the rights applied for. Blank forms of memorial may be obtained from the Commissioner of Irrigation, at Calgary, Alberta.

Permission to construct ditches or other works across road allowances or surveyed highways.—If the proposed scheme includes any crossings over road allowances or public highways the consent of the Minister of Public Works for the province within which such works are situated must be obtained before the works are constructed.

Permission to construct works across railway lines.—In cases where the crossing of a railway line by an irrigation ditch or other works is required, permission must be had from the Railway Company or the Board of Railway Commissioners, as may be required.

Plan to accompany applications.—The memorial filed in connection with an application for a water right must be accompanied by a general and detail plan, showing the location and character of the proposed works.

General Plan is intended to show the location of the works to be constructed and the lands to be irrigated therefrom or which are affected thereby, as a record of the rights applied for.

Detail Plan.—This plan shall show exactly all the main details of the structures to be erected in connection with the proposed undertaking.

Full and detailed instructions regarding the preparation of these plans will be forwarded upon application to the Commissioner of Irrigation, at Calgary, Alberta.

Notices.—Section 19 of the Act provides for the publication of notice of rights applied for. This notice will be prepared by the Commissioner of Irrigation as soon as the application has been approved, and will be forwarded to the applicant with the necessary instructions for publication in newspapers named by the Commissioner.

Approval of application and authorization to construct works.—When the memorial and plans have been approved by the Commissioner, the required notice of the application published, and permission has been given to construct the proposed works across road allowances, etc., authorization will be issued for the construction of the works as shown by the memorial and plans filed, and a period of time will be specified within which the works should be completed.

Right of way for proposed ditches or other works.—All necessary right of way should be acquired by applicants for water rights before proceeding to construct any works across lands not owned or controlled by the applicant.

To aid in irrigation development the Government grants free right of way over vacant Dominion lands.

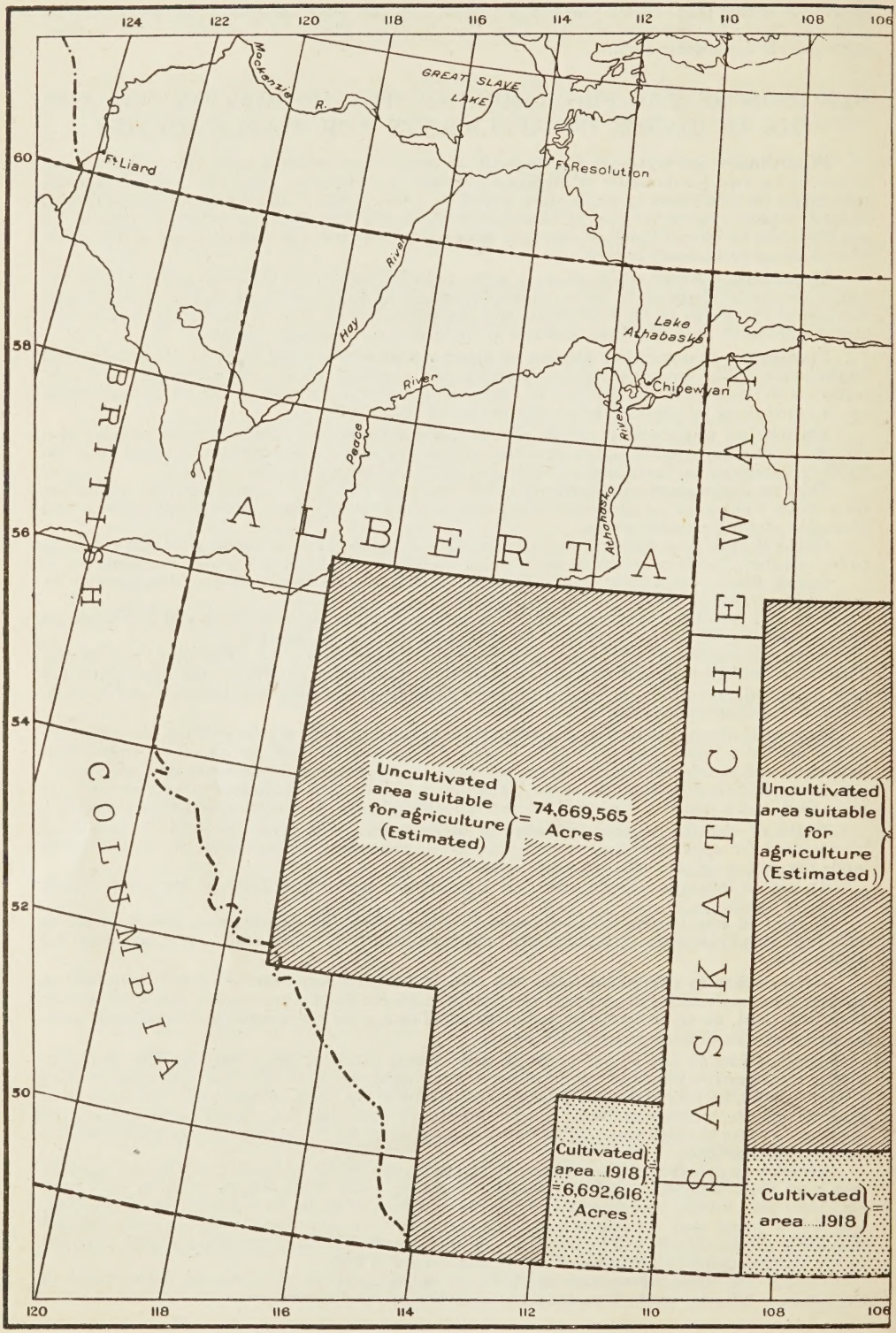
If right of way is required over privately owned lands, an agreement or easement across such land should be secured, in triplicate, and submitted to the Commissioner of Irrigation for registration.

Agreements to use water from any canal, ditch or reservoir.—Where it is desired to irrigate from any canal, ditch or reservoir, lands which are not the property of the applicant for the water right, an agreement with each individual owner for the irrigation of such lands must be filed with the Commissioner of Irrigation.

Application to use water through any canal, ditch or reservoir not the property of the applicant.—When an applicant for a water right wishes to take water through another person's works, he must submit a memorial and plans in the usual manner; also an agreement, in quadruplicate, which shall bind the party owning or operating the original works to carry the applicant's water through these works from the point of intake to the point where the applicant's own works commence.

License to divert and use water.—When irrigation works in connection with any application have been completed, and all questions regarding right of way, agreements to use water, etc., have been settled, an inspection of the works will be made by an officer of the department, and if it is found that the works have been constructed in accordance with the memorial and plan filed, a water license will be issued to the applicant for the water applied for upon payment to the Commissioner of Irrigation of the regulation fee of $10.

Note.—For fuller information apply to the Superintendent of Irrigation, Department of the Interior, Ottawa, or the Commissioner of Irrigation, at Calgary.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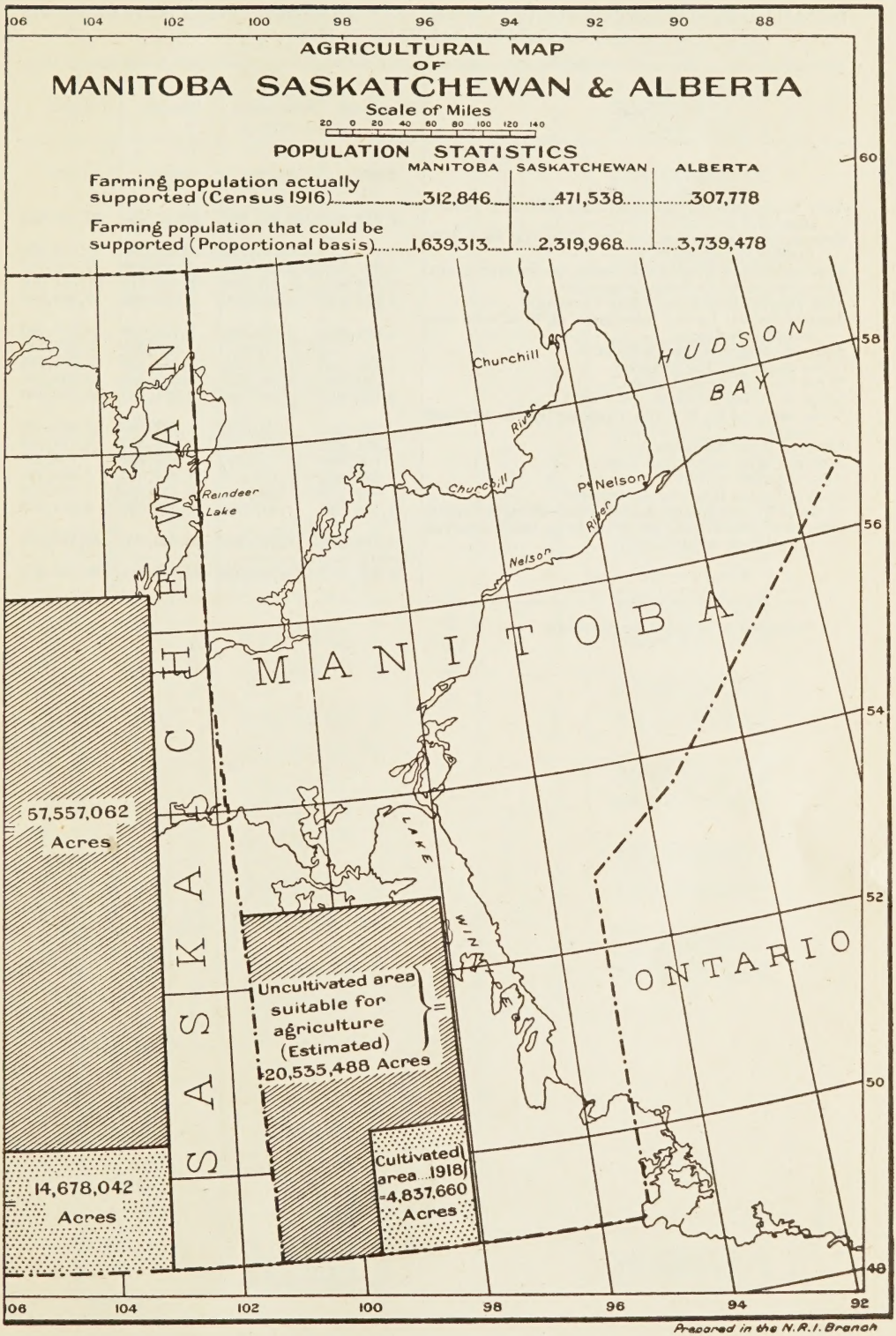
Mackenzie R.
GREAT SLAVE LAKE
Ft. Liard
Ft. Resolution
Hay River
Lake Athabasca
Chipewyan
River
Peace River
Athabasca River
BRITISH COLUMBIA
ALBERTA
SASKATCHEWAN
Uncultivated area suitable for agriculture (Estimated) = 74,669,565 Acres
Uncultivated area suitable for agriculture (Estimated)
Cultivated area 1918 = 6,692,616 Acres
Cultivated area 1918
120
118
116
114
112
110
108
106


AGRICULTURAL MAP
OF
MANITOBA SASKATCHEWAN & ALBERTA
Scale of Miles
20 0 20 40 60 80 100 120 140
POPULATION STATISTICS
MANITOBA
SASKATCHEWAN
ALBERTA
Farming population actually supported (Census 1916) 312,846 471,538 307,778
Farming population that could be supported (Proportional basis) 1,639,313 2,319,968 3,739,478
106 104 102 100 98 96 94 92 90 88
60
58
56
54
52
50
48
Churchill River
HUDSON BAY
Reindeer Lake
Churchill
Pt Nelson
Nelson River
Nelson
SASKATCHEWAN
MANITOBA
ONTARIO
LAKE WINNIPEG
57,557,062 Acres
Uncultivated area suitable for agriculture (Estimated) 20,535,488 Acres
Cultivated area 1918 =4,837,660 Acres
14,678,042 Acres
Prepared in the N.R.I. Branch

DETAILED STATEMENT OF SURVEYED AREAS IN MANITOBA, SASKATCHEWAN AND ALBERTA, JANUARY 1, 1919.

Lands.	Manitoba.	Saskatchewan.	Alberta.	Total.
	Acres.	Acres.	Acres.	Acres.
Area under Homestead (including Military Homesteads)	8,417,400	27,133,700	18,145,500	53,696,600
Area under Pre-emption and Pur. Hds. (1st Sept. 1908 to 20th March, 1918)	.....	5,854,200	2,825,300	8,679,500
Area under Half-Breed Scrip, sales, special grants, etc.	5,087,400	2,302,000	1,223,300	8,612,700
Area granted to Railway Companies	3,566,997	15,177,063	13,120,014	31,864,074
Area granted to Hudson's Bay Company	1,210,000	3,087,000	2,092,000	6,389,000
Area of School Land Endowment (1/18 of area surveyed in sections)	1,624,600	3,932,000	3,722,800	9,279,400
Area sold under Irrigation System	.....	76,672	980,850	1,057,522
*Area under Timber Licenses	1,079,300	1,119,200	1,353,100	3,551,600
*Area under Grazing Leases	82,700	3,009,100	2,902,400	5,994,200
*Area of Forest Reserves and Parks	2,606,400	6,195,700	16,754,700	25,556,800
*Area reserved for Forestry Purposes (inside surveyed tract)	746,300	1,430,000	1,677,500	3,853,800
*Area of Road Allowances	973,000	1,464,000	1,276,500	3,713,500
Area of Parish and River Lots	505,200	82,500	118,600	706,300
Area of Indian Reserves	433,860	1,119,454	1,367,974	2,921,288
Area of Indian Reserves surrendered	87,560	344,414	302,228	734,202
*Area of Water-Covered Lands (inside surveyed tract)	4,246,300	1,902,300	2,285,050	8,433,650
Area now available for entry (includes lands reserved for soldiers' settlement)	4,788,000	4,607,300	15,000,000	24,395,300
Total surveyed area	35,455,017	78,836,603	85,147,816	199,439,436

*Area not available for cultivation.

ACREAGE AND PRODUCTION OF CROPS 1917 AND 1918.

	Manitoba.				Saskatchewan.				Alberta.			
	1917.		1918.		1917.		1918.		1917.		1918.	
	Acreage.	Production.	Acreage.	Production.	Acreage.	Production.	Acreage.	Production.	Acreage.	Production.	Acreage.	Production.
		Bush.		Bush.		Bush.		Bush.		Bush.		Bush.
Wheat	2,448,860	41,039,700	2,983,702	55,947,900	8,273,250	117,921,300	9,249,260	106,366,500	2,897,300	52,992,100	3,892,489	23,862,100
Oats	1,500,000	45,375,000	1,714,894	63,451,000	4,521,600	123,213,600	4,988,499	134,689,500	2,537,900	86,288,600	2,651,548	62,974,300
Barley	708,000	15,930,000	1,102,965	31,986,000	669,900	14,067,900	699,296	14,160,700	472,100	10,386,200	470,073	8,461,200
Flax	16,300	146,700	107,961	1,484,500	753,700	4,710,600	840,957	5,466,200	139,800	978,600	95,920	480,000
Rye	37,000	638,300	240,469	5,110,000	53,250	998,400	123,500	1,667,300	30,880	633,000	47,877	873,800
Roots	36,900	4,106,000	54,910	10,819,800	78,804	10,737,000	69,553	9,154,200	59,864	9,681,000	56,753	5,476,800
Mixed Grains	1,400	43,400	30,309	1,121,400	39,500	1,264,000	23,449	492,500	24,027	618,700	27,989	699,700
		Tons.		Tons.		Tons.		Tons.		Tons.		Tons.
Fodder Crops	89,200	141,700	89,940	150,000	285,433	416,200	333,246	435,300	528,894	798,800	493,985	451,150

LIVE STOCK.

	Manitoba.				Saskatchewan.				Alberta.			
	Horses.	Cattle.	Sheep.	Swine.	Horses.	Cattle.	Sheep.	Swine.	Horses.	Cattle.	Sheep.	Swine.
*1901	163,867	349,886	29,464	126,459	83,461	217,053	73,097	27,753	93,001	375,686	80,055	46,163
*1906	215,819	521,112	28,975	200,509	240,566	472,854	121,290	123,916	226,534	950,632	154,266	114,623
*1911	280,374	435,568	37,322	188,416	507,468	633,638	114,216	286,295	407,153	739,725	133,592	237,511
1912	293,776	415,601	40,800	183,370	551,645	646,140	114,810	344,298	451,573	745,229	135,075	378,747
1913	304,088	409,718	42,840	184,745	580,386	663,098	115,568	386,784	484,809	779,293	178,015	350,692
1914	316,707	408,302	45,303	186,276	609,521	679,060	126,027	454,703	519,424	812,100	211,001	397,123
1915	317,847	404,097	50,880	163,308	630,062	755,293	133,311	411,324	544,772	843,974	238,579	229,696
*1916	324,175	554,158	76,750	205,898	841,907	1,011,393	124,237	530,727	634,188	1,160,090	292,620	603,554
1917	324,175	560,047	80,588	175,013	880,301	1,211,090	127,892	573,938	718,317	1,535,294	276,966	730,237
1918	384,772	746,899	136,782	284,596	990,009	1,279,331	134,177	521,240	791,246	1,691,582	332,179	601,534

*Census.

AGRICULTURAL LOAN ACTS IN MANITOBA.

1. *The Manitoba Farm Loans Act (March 9, 1917).*

This Act provides that persons residing or intending to reside on land within the province may obtain through the Manitoba Farm Loans Association, on first mortgage security, loans up to fifty per cent (50 per cent) of the appraised value of the property offered, extending over a period of thirty years at a rate of interest not exceeding six per cent (6 per cent) per annum, repayment being made on an amortization basis by equal annual payments composed of principal and interest. The loan must be made to make improvements, to increase productiveness or to pay off prior encumbrances on the land. It also makes provision for each borrower to become a shareholder in the Association by investment in its capital stock of an amount equal to five per cent (5 per cent) of the sum borrowed, and none other but borrowers and the province of Manitoba can hold such shares.

2. *An Act respecting Rural Credits.*

A rural credit society may be initiated by a petition, addressed to the Lieutenant-Governor-in-Council and sent to the Provincial Secretary, signed by not less than fifteen farmers. The society cannot commence business until at least thirty-five have subscribed $3,500 and ten per cent paid in. The management of the business of the society is vested in a board of directors composed of nine members. Loans are made only for the purchase of feed, seed, implements, live stock and farming operations. Loans must be repaid within the calendar year at a date agreed upon. The rate of interest charged is not greater than seven per cent per annum, of which one-seventh goes to the society. A lien is taken on all machinery, goods or personal property purchased with the loan made. In the event of a borrower's defaulting, the society pays the lender and then seeks to recover the amount so paid from the borrower by any means authorized by any statutes applicable thereto.

AGRICULTURAL LOAN ACTS IN SASKATCHEWAN.

1. *Farm Loans Act.*—Under the administration of a Board of three appointed by the Lieutenant-Governor-in-Council this act makes provision for the lending to agriculturalists of money on first mortgages for the purpose of improvement of properties, the payment of liabilities; the acquisition of land or for any other purposes approved by the Board. The loan is limited to fifty per cent of the value of the land. All loans are for thirty-years repayable in equal annual instalments with interest sufficient to realize a sum equal to the interest on the money raised by the Board to provide the loan together with the expenses of management.

2. *An Act respecting the purchase and sale of live stock by the Provincial Department of Agriculture.*

This act provides for an appropriation of $500,000 by the Provincial Legislature for the purpose of purchasing live stock to be sold to agriculturalists for cash or partly cash and partly credit in which latter case a lien is taken on the animals till they are paid for.

3. *Co-operative Farm Mortgage Association Act.*—This act makes provision whereby a society of at least twenty-five agriculturalists may be formed by petition to a Board of three commissioners appointed by the Provincial Government. Each member of the society must be an applicant for a loan and must give security for fifty per cent of the loan which is made on a first mortgage only, and which is limited to forty per cent of the value of the farm property.

AGRICULTURAL LOAN ACTS IN ALBERTA.

1. *Alberta Farm Loan Act.*—This Act provides for the lending of money on first mortgages on farm lands up to 40 per cent of their appraised value. The loan is limited to $5,000 to any one person. The rate of interest charged is sufficient to pay interest on bonds issued to provide funds for loan purposes together with office expenses. The mortgage is for 30 years repayable in equal annual instalments. The loan business is administered by a Farm Loan Board, the general management of which is in the hands of a Commissioner of Farm Loans appointed by the Lieutenant-Governor in Council.

2. *Alberta Co-Operative Credit Act.*—This Act makes provision whereby a society of at least thirty agriculturalists may be formed by petition to the provincial treasurer. Each must subscribe $100 and pay $20 on account in cash. Certificate of registration is then granted by the Government; officers are elected and arrangements made with the banks to loan money on notes endorsed by the society. Loans are only made for the purpose of buying feed, seed, live stock and implements or for paying for season's operations. The loan must be repaid in one year. The rate of interest charged is agreed upon between the society and lender. Until the loan is repaid the society holds a lien on the animals or machinery purchased. The profits are applied to expenses, dividend and reserve.

3. *Live Stock Encouragement Act.*—Any five or more agriculturalists may form an association and may jointly apply to the Live Stock Commissioner for a loan not to exceed $500 each for the purchase of cows and heifers. The Commissioner notifies the lender as to the amount of the guarantee he will make and how much each member of the association is to receive; 10 per cent of the joint loan may be used by one or more members for the joint purpose of a pure bred bull. The lender then takes the joint and several notes from the members of the association. The loan is repayable within five years with interest at not more than 6 per cent payable yearly. The lender also collects from each purchaser in the association $1 expense money for each $100 of his portion of the loan to be borrowed. The Provincial Treasurer guarantees the loan to the lender, who then deposits the money to the joint credit of the borrowers and the Live Stock Commissioner. The live stock purchased are branded and no attachment can issue against them. The purchaser cannot dispose of these cattle until the note is paid off.

60934—3½

*MINERALS

MINERAL PRODUCTION OF MANITOBA, 1916 AND 1917.

Product.		1916.		1917.	
		Quantity.	Value.	Quantity.	Value.
Copper	Lbs.	.....	.....	1,116,000	$ 303,329
Gold	Ozs.	.....	.....	440	9,095
Silver	"	.....	.....	7,201	5,863
Calcined Gypsum	Tons.	28,489	$ 191,283	33,347	258,934
Clay products		.....	104,248	.....	114,651
Lime	Bush.	355,301	83,754	393,982	92,932
Cement	Brls.	427,293	794,897	544,949	1,175,669
Sand-lime brick	No.	3,215,097	33,048	5,070,500	76,742
Stone		.....	372,894	.....	301,968
Other products		.....	243,452	.....	289,081
Total		.....	1,823,576	.....	2,628,264

*Department of Mines, Ottawa.

MINERAL PRODUCTION OF SASKATCHEWAN, 1916 AND 1917.

Product.		1916.		1917.	
		Quantity.	Value.	Quantity.	Value.
Coal	Tons.	281,300	$441,836	355,445	$662,451
Clay products		.....	78,668	.....	78,251
Sand-lime brick	No.	990,000	9,890	674,500	7,674
Other products		.....	60,079	.....	112,275
Total		.....	590,473	.....	860,651

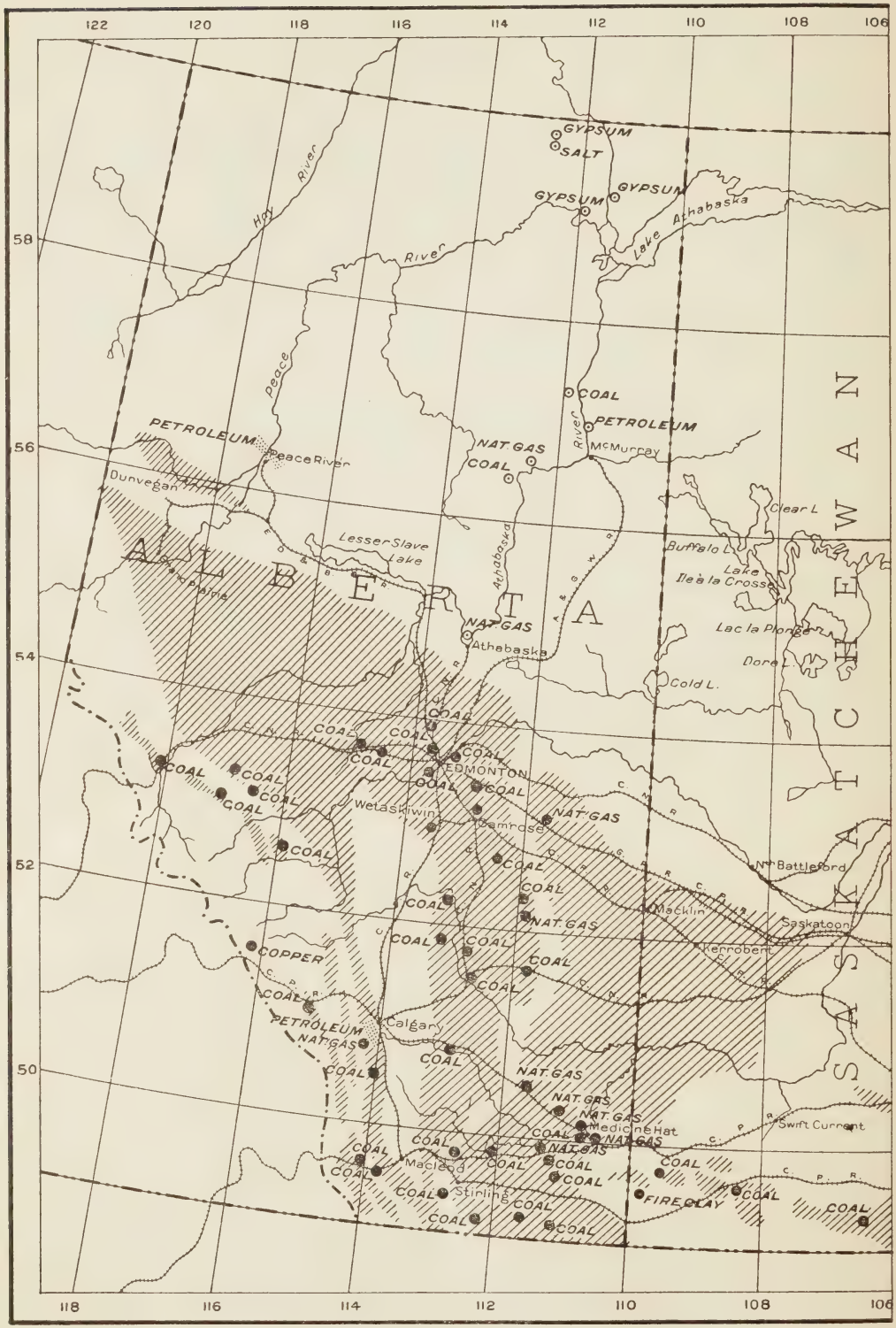
MINERAL PRODUCTION OF ALBERTA, 1916 AND 1917.

Product.	1916.		1917.	
	Quantity.	Value.	Quantity.	Value.
Gold.....Ozs.	82	$ 1,695	.....	.....
Coal.....Tons.	4,559,054	11,386,577	4,736,368	14,153,685
Natural gas.....M cu. ft.	6,904,231	1,113,296	6,744,130	1,299,976
Petroleum.....Brls.	.....	.....	8,500	63,302
Cement..... "	275,727	477,832	259,423	567,969
Clay products.....	.....	225,140	.....	309,991
Lime.....Bush.	78,019	20,033	104,540	35,516
Sand-lime brick.....No.	697,500	5,571	1,547,590	15,703
Stone.....	.....	257	.....	7,482
Other products.....	.....	67,142	.....	73,911
Total.....	.....	13,297,543	.....	16,527,535

*MINERAL AREAS AND QUARRY LANDS SOLD OR LEASED IN MANITOBA, SASKATCHEWAN AND ALBERTA UP TO THE 31ST MARCH, 1919.

Sold or Leased.	Manitoba.	Saskatchewan.	Alberta.
	acres.	acres.	acres.
Coal lands sold.....	.....	7,369	239,585
Mining lands, other than coal, sold.....	7,694	335	19,702
Coal lands leased.....	.....	8,421	332,165
Quarry lands leased.....	2,250	1,098	4,072
Petroleum and natural gas lands leased.....	1,213	44,274	1,209,888
Tar sands lands leased.....	.....	.....	2,040
Quartz mining lands leased.....	366	.....	.....

*Mining lands and Yukon Branch, Department of the Interior.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GYPSUM
SALT
GYPSUM
GYPSUM
Hay River
River
Lake Athabaska
Peace River
COAL
PETROLEUM
McMurray
PETROLEUM
Peace River
NAT. GAS
COAL
Dunvegan
Athabaska River
Clear L.
Buffalo L.
Lake Ile à la Crosse
Lesser Slave Lake
ALBERTA
SASKATCHEWAN
NAT. GAS
Athabaska
Lac la Plonge
Dore L.
Cold L.
COAL
EDMONTON
Wetaskiwin
Camrose
NAT. GAS
Mt. Battleford
Macklin
Saskatoon
Kerrobert
COPPER
Calgary
PETROLEUM
NAT. GAS
NAT. GAS
NAT. GAS
NAT. GAS
Medicine Hat
NAT. GAS
Swift Current
Macleod
Stirling
FIRE CLAY
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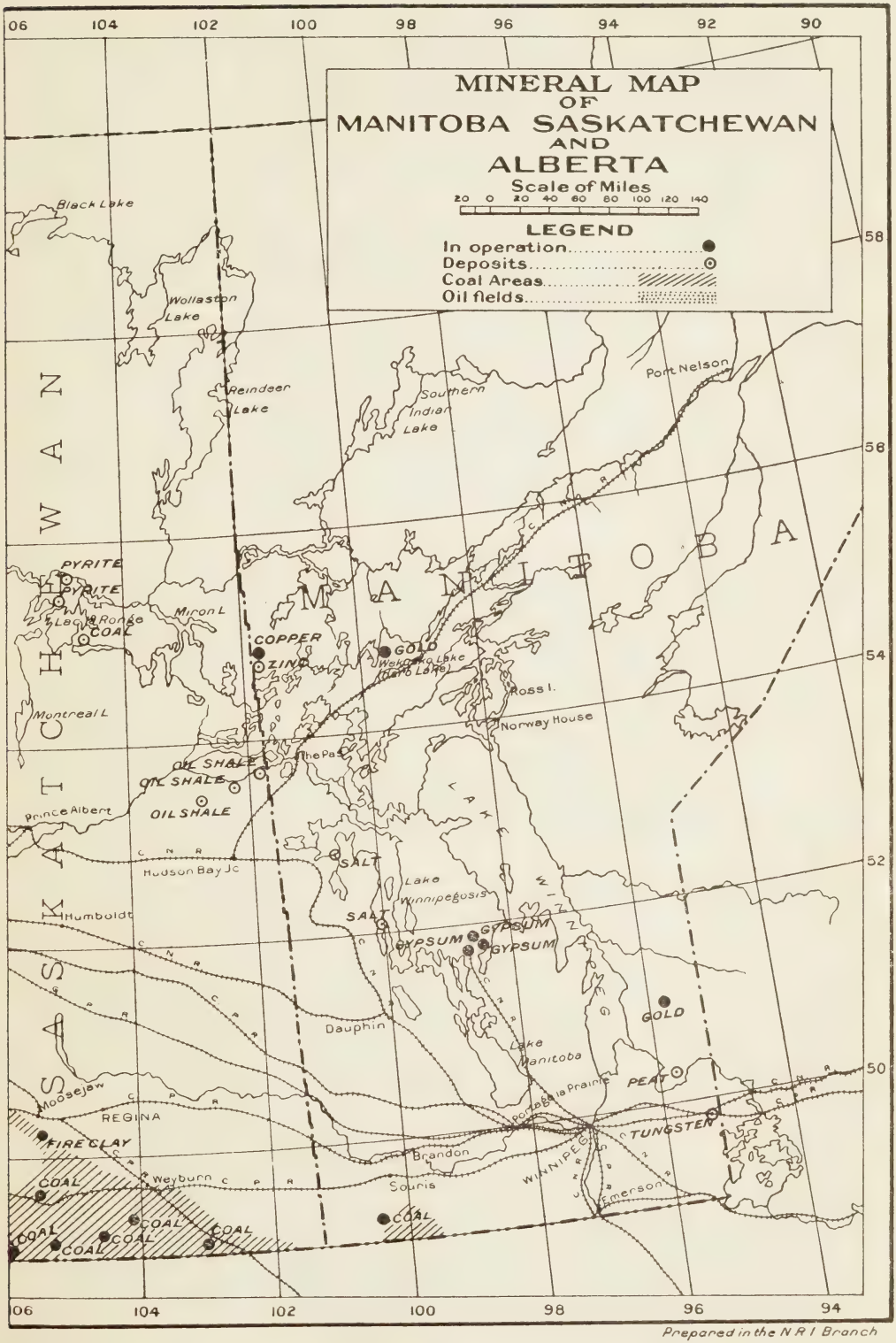
MINERAL MAP
OF
MANITOBA SASKATCHEWAN
AND
ALBERTA
Scale of Miles
20 0 20 40 60 80 100 120 140
LEGEND
In operation
Deposits
Coal Areas
Oil fields
106
104
102
100
98
96
94
92
90
58
56
54
52
50
Black Lake
Wollaston Lake
Reindeer Lake
Southern Indian Lake
Port Nelson
SASKATCHEWAN
MANITOBA
PYRITE
PYRITE
COAL
COPPER
ZINC
GOLD
Ross I.
Norway House
Montreal L
OIL SHALE
OIL SHALE
OIL SHALE
Prince Albert
Hudson Bay Jc
Humboldt
SALT
Lake Winnipegosis
SALT
GYPSUM
GYPSUM
GYPSUM
GOLD
Dauphin
Lake Manitoba
PEAT
Moosejaw
REGINA
FIRE CLAY
Weyburn
Brandon
Souris
TUNGSTEN
WINNIPEG
Emerson
COAL
COAL
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COAL
Prepared in the N.R.I. Branch

WATER POWERS*

Cheap power is a resource essential to the development of other natural resources. Water power is a prime mover which can be used directly for mechanical operations or indirectly through the medium of electricity. In other words, power can be used either at the site or at a distance therefrom. Improvements in electrical transmission have greatly widened the effective radius of water power and have brought distant markets, hitherto unsupplied, within reach of the power site.

No part of Canada is more fortunate with respect to its power producing agencies than the Prairie Provinces. Where there is no water power within economic transmission range, there are unlimited coal reserves. In the province of Manitoba there is sufficient water power available within economic transmission range of present settlements to meet all anticipated demands for many years. The Winnipeg river, one of the best naturally regulated rivers on the continent, will furnish sufficient power to meet the industrial demands of a population of 3,000,000 people. In the foothills of Alberta there are undoubtedly many water power sites capable of economic development as soon as there is a demand for the output. For instance, there is now installed on the Bow river, a short distance from Calgary, hydraulic equipment capable of producing approximately 30,000 h.p. There are also several additional power sites on the river, all of which are capable of producing sufficient power for a population of 300,000 people.

A large number of the larger power sites of the Prairie Provinces are remote from the centres of population and from the transportation systems. Recent exploration has, however, revealed the existence of promising mineral resources in the northern country and there is indication that these resources are widespread and of considerable magnitude. If this is the case their future development will require large quantities of power and it may prove to be a remarkable coincidence that nature has provided the necessary power adjacent to or within easy transmission distance of these resources.

By no means all of the power possibilities of the Prairie Provinces have been investigated and detailed information is available for only a few of the possible power sites, but sufficient general information has been gathered to render possible the formation of a fair estimate of the amount of power available on the main rivers.

The following table outlines briefly the power available on the main rivers of Manitoba, Saskatchewan and Alberta.

MANITOBA.

River.	Undeveloped Power.	Horsepower Developed.
	H. P.	H. P.
Little Saskatchewan	.....	1,125
Winnipeg	295,820	81,320
Saskatchewan	53,200	
Nelson	2,445,000	
Churchill	†274,750	
Burntwood	5,000	
Grass	5,000	
Dauphin	16,960	
Pigeon	14,900	
Berens	7,300	
Bloodvein	2,670	
Total	3,120,600	82,435

* Dominion Water Power Branch, Department of the Interior.
† Lower reaches of Churchill River have not been investigated.

SASKATCHEWAN.

River.	Undeveloped Power.	Horsepower Developed.
	H. P.	H. P.
Churchill	311,150	
Reindeer	93,070	
Sturgeon-Weir	5,660	
Rapid	5,927	
Saskatchewan	72,240	
North Saskatchewan	3,439	
Total	491,486	

ALBERTA.

Slave	313,500	
Peace	19,000	
Athabaska	97,795	
North Saskatchewan	10,800	
Brazeau	2,360	
Red Deer	1,616	
Elbow	7,600	
Bow	14,595	32,380
Spray	1,532	
Total	468,798	32,380

SYNOPSIS OF DOMINION WATER-POWER REGULATIONS

1. An applicant who contemplates the development of a water power must submit an application in writing, giving certain general specified information, including facts on both the engineering and financial aspects of the proposed undertaking.

2. Upon the consideration of such information the Department may, if it approves of the proposed project, enter into an agreement with the applicant for a power development.

3. No priority of right whatever is obtained by making a formal application. All pending applications are considered and a license may be issued to such applicant as the Department considers offers the best scheme.

4. If, after investigation by the Department's engineers, an applicant's scheme is approved, a formal agreement may be made consisting of a license and lease which run concurrently for a period of twenty-one years, renewable for three additional periods of twenty-one years or eighty-four years in all, unless terminated earlier under the provisions of the regulations.

5. The agreement provides that the work must be diligently carried on according to the plans approved of, that actual construction work must be started within a certain time, that a minimum amount of money must be expended in each year of the life of the agreement on actual construction operations, and that a minimum amount of power, to be determined by the Department, must be developed within a period not to exceed five years.

6. Rentals are revisable at the end of each twenty-one year period, or the Government may, at such time, if deemed advisable, take over the works of the licensee upon payment therefor of an amount to be fixed by arbitrators.

7. The regulations require the development of power in keeping with the demand.

8. Provisions are made for the adjustment of rates and prices charged to the public for power.

9. The regulations provide that the Department may control the manner of diverting the waters authorized so as to promote the maximum advantageous development of the power resources of the river on which the site is located, and may, from time to time, order such improvements or enlargements in any scheme as are considered necessary to insure the proper development of available resources.

FISHERIES*

YIELD AND VALUE OF THE FISHERIES IN THE PROVINCE OF MANITOBA DURING THE CALENDAR YEAR, 1917.

Kind of fish.		Quantity.	Value.
Trout	Cwt.	1,561	$ 10,927
Whitefish	"	52,419	390,321
Pickerel	"	49,728	345,179
Pike	"	42,013	208,846
Sturgeon	"	3,621	51,080
Mullets	"	10,013	22,026
Perch	"	8,599	42,995
Tullibee	"	52,646	263,230
Cat-fish	"	400	2,600
Goldeyes	"	7,982	39,084
Mixed fish	"	74,640	158,750
Cavaire	lbs.	5,500	8,250
Total			1,543,288

MANITOBA FISHING LICENSES.

Domestic Permit.—Any resident settler, including Indian, shall be eligible for an annual fishing permit to fish with not more than one hundred yards of gill-net or with a dip-net or with not more than fifty baited hooks, for domestic use, but not for sale or barter. Such permit shall be issued free.

Commercial License.—A commercial license for dip-net fishing shall authorize the use of one dip-net for the capture of suckers and other coarse fish not protected by a close season. The fee on such license shall be two dollars.

Commercial fishing is allowed in the larger lakes of Manitoba, and in most cases a limit is set, on the amount of fish that may be taken during the summer or winter season, on the amount of fishing contrivance to be used, and on the time the various kinds of fish may be taken. The fees range from two to fifty dollars.

Sturgeon License.—A sturgeon fishing license for commercial fishing shall authorize the use of not more than five hundred yards of gill-net or five hundred baited hooks. The fee on such license shall be five dollars.

A sturgeon fishing permit for domestic fishing shall authorize the use of not more than one hundred yards of gill-net or fifty baited hooks, and under this permit not more than three sturgeon may be taken in one week.

A license to authorize the use of not more than two hundred baited hooks for the capture of catfish may be issued for any of the waters of the province. The fee on such license shall be two dollars.

YIELD AND VALUE OF THE FISHERIES IN THE PROVINCE OF SASKATCHEWAN DURING THE CALENDER YEAR, 1917.

Kind of Fish.		Quantity.	Value.
Trout	Cwt.	3,696	$ 18,594
Whitefish	"	43,301	197,920
Pickerel	"	5,831	28,314
Pike	"	9,697	45,916
Sturgeon	"	60	600
Perch	"	26	128
Tullibee	"	1,124	5,699
Goldeyes	"	65	429
Mixed fish	"	8,372	22,638
Total			320,238

Cwt.—100 lbs.

*Fisheries Branch, Department of Naval Service.

YIELD AND VALUE OF THE FISHERIES IN THE PROVINCE OF ALBERTA DURING THE CALENDAR YEAR, 1917.

Kind of Fish.		Quantity.	Value.
Trout	Cwt.	322	$ 3,182
Whitefish	"	29,792	133,573
Pickerel	"	5,239	19,996
Pike	"	7,421	19,356
Tullibee	"	999	3,862
Goldeyes	"	84	696
Mixed fish	"	1,177	3,335
Total			184,009

SASKATCHEWAN AND ALBERTA FISHING LICENSES.

There are four classes of licenses issued, namely, domestic, fisherman's, commercial and sturgeon.

Domestic License.—Any resident who is a British subject or a bona fide homesteader shall be eligible for a domestic license, which will entitle him, or a member of his family, to fish with not more than sixty yards of gill-net, or with one hoop-net and a set line of not more than twenty baited hooks.

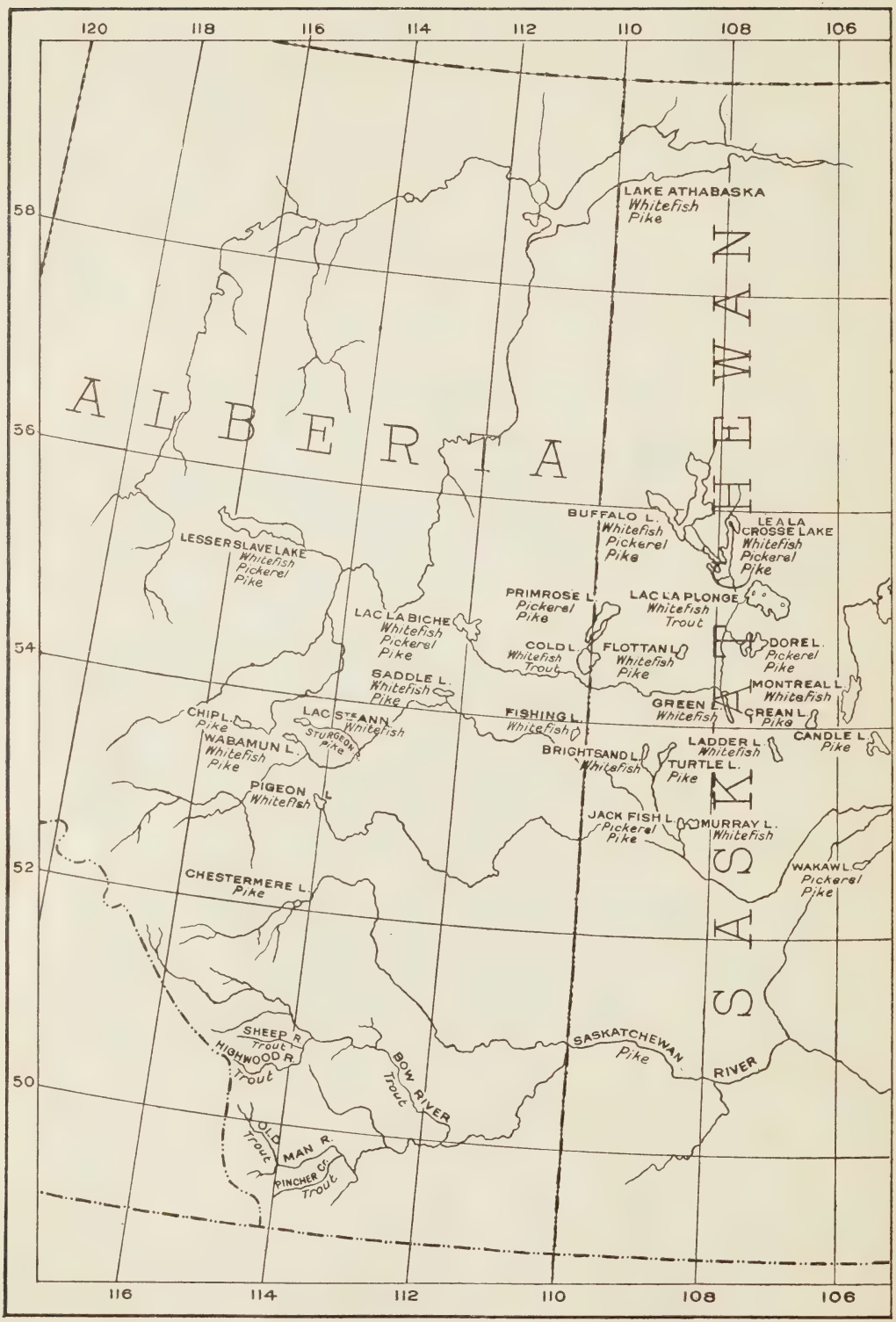
Fish caught under this license shall be for home consumption only and not for sale or barter. The annual fee for this license shall be two dollars.

Fisherman's License.—Any resident who is a British subject or a bona fide homesteader shall be eligible for a fisherman's license, which will entitle him to fish with not more than three hundred yards of gill-net in the province of which he is a resident. The fee for this license shall be five dollars.

Commercial License.—Any resident who is a British subject shall be eligible for a commercial license, which will entitle him to fish with not more than six hundred yards of gill-net in the province of which he is a resident. The fee for this license shall be ten dollars. Such license will be issued for the larger lakes only and will be good for the season—summer or winter only—for which it is issued.

An Indian or half-breed permit, domestic license, fisherman's license or commercial license shall authorize the taking of all kinds of fish, except sturgeon.

Sturgeon License.—A sturgeon fishing license for commercial fishing shall authorize the use of not more than five hundred yards of gill-net or five hundred baited hooks, the fee is five dollars. A sturgeon fishing permit for domestic fishing shall authorize the use of not more than one hundred yards of gill-net or fifty baited hooks and under this permit not more than three sturgeon can be taken in one week.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ALBERTA
SASKATCHEWAN
LAKE ATHABASKA
Whitefish
Pike
BUFFALO L.
Whitefish
Pickerel
Pike
LEA LA CROSSE LAKE
Whitefish
Pickerel
Pike
LESSER SLAVE LAKE
Whitefish
Pickerel
Pike
PRIMROSE L.
Pickerel
Pike
LAC LA PLONGE
Whitefish
Trout
LAC LA BICHE
Whitefish
Pickerel
Pike
COLD L.
Whitefish
Trout
FLOTTAN L.
Whitefish
Pike
DOREL.
Pickerel
Pike
SADDLE L.
Whitefish
Pike
MONTREAL L.
Whitefish
GREEN
Whitefish
GREAN L.
Pike
CANDLE L.
Pike
CHIP L.
Pike
LAC STE ANN
Whitefish
STURGEON
Pike
FISHING L.
Whitefish
WABAMUN L.
Whitefish
Pike
BRIGHTSAND L.
Whitefish
LADDER L.
Whitefish
TURTLE L.
Pike
PIGEON L.
Whitefish
JACK FISH L.
Pickerel
Pike
MURRAY L.
Whitefish
WAKAW L.
Pickerel
Pike
CHESTERMERE L.
Pike
SHEEP R.
Trout
HIGHWOOD R.
Trout
BOW RIVER
Trout
SASKATCHEWAN
Pike
RIVER
OLD MAN R.
Trout
PINCHER CR.
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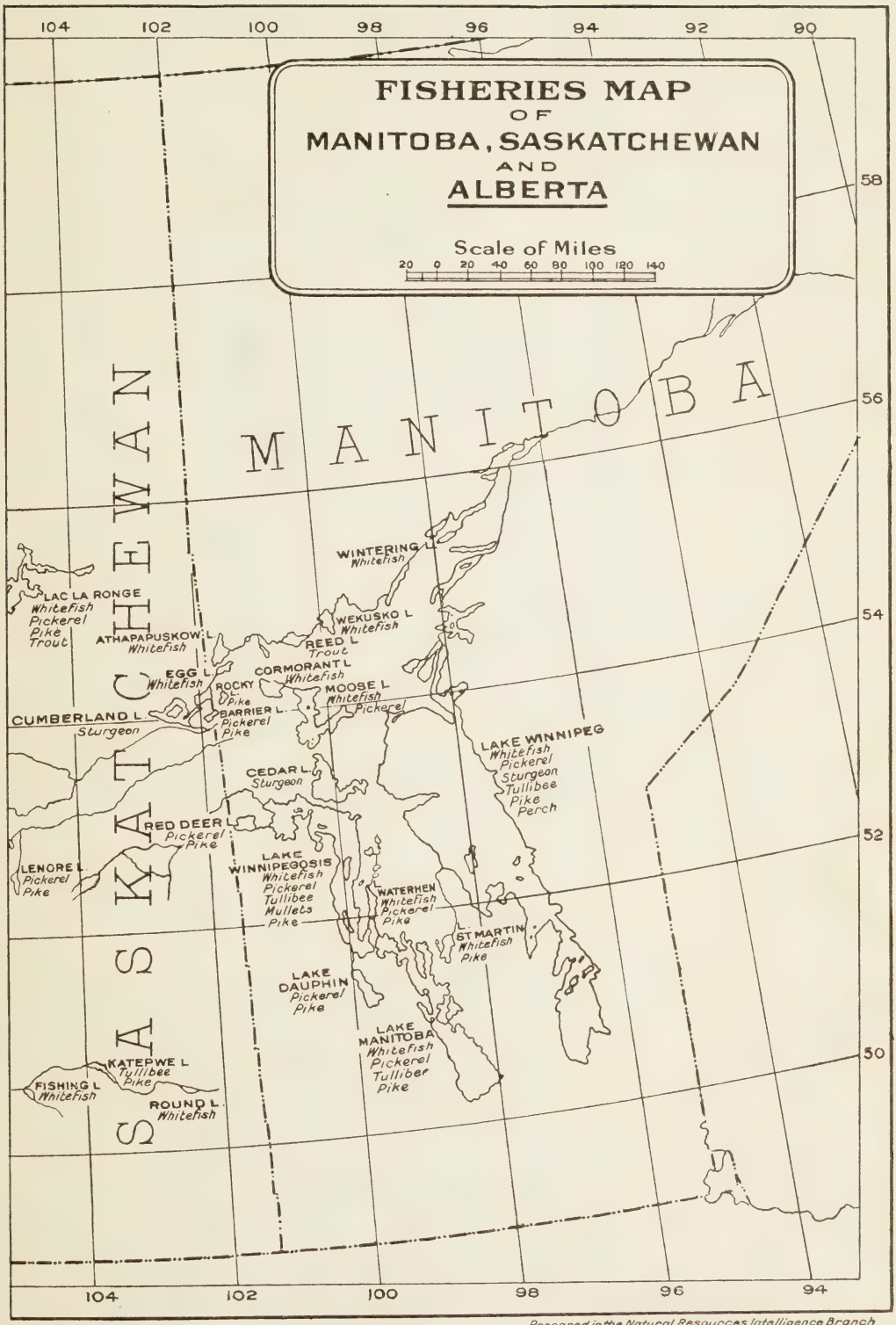


Prepared in the Natural Resources Intelligence Branch
Department of the Interior

PARKS AND FORESTRY

DOMINION PARKS.

Name.	Province.	Area.	Revenue Derived 1916–17.
		acres.	$
Rocky Mountain	Alberta	1,152,000	40,290 93
Jasper	"	2,816,000	2,828 73
Waterton Lakes	"	270,720	1,332 00
Buffalo	"	103,680	257 23
Elk Island	"	10,240	8 25
Antelope	"	5,020	205 20
Moose Mountain	"	1,280	1 50

ESTIMATED AREA AND AMOUNT OF SAW TIMBER IN MANITOBA, SASKATCHEWAN AND ALBERTA.

——	Estimated area covered by Saw Timber.	Estimated amount of Saw Timber.
	Acres.	Board ft.
Manitoba	1,920,000	6,850,000,000
Saskatchewan	3,584,000	14,000,000,000
Alberta	5,416,000	21,000,000,000

TIMBER SOLD AND REVENUE DUE ON LICENSE TIMBER BERTHS WITHIN DOMINION FOREST RESERVES, 1916–17.

Manitoba.

Forest Reserve.	Timber Berths.	Area in Reserve	Quantities Sold.			Revenue Dues and rent.
			Lumber.	Laths.	Other * Products.	
	No.	Sq. Mls.	Ft. B.M.	No.		$ cts.
Riding Mountain	5	45·43	325,000	.....	.....	375 94
Duck Mountain	11	99·98	11,514,252	.....	.....	5,713 56
Total	16	145·41	11,839,252			6,089 50

Saskatchewan.

Porcupine and Pasquia	44	960 99	22,296,544	.....	.....	16,486 68
Sturgeon	12	177·78	37,573,287	8,226,500	4,021	17,335 72
Big River	3	260·77	34,135,316	16,538,150	6,811	14,046 99
Nisbet and Pines	5	116·80	.....	.....	3,004	583 15
Total	64	1,516·34	94,005,147	24,764,650	13,836	48,452 54

Alberta.

Crowsnest	11	254·94	2,558,766	.....	780,051	4,142 58
Bow River	15	374·44	6,540,403	974,300	4,473	6,654 59
Clearwater	4	377 56	.....	.....	.....	1,887 80
Brazeau	11	177·64	.....	.....	35,307	2,598 00
Total	41	1,184·58	9,099,169	974,300	819,831	15,282 97

*Includes cordwood, fence-posts, boom timber, piling, mine timber, railway cross-ties, etc.

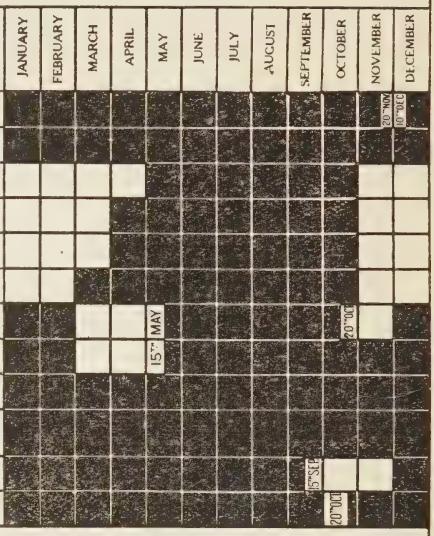
TIMBER PERMITS ISSUED ON FOREST RESERVES, MANITOBA, SASKATCHEWAN, AND ALBERTA, 1916–17.

Area.	No. of Permits.		Kinds and Quantities of Timber authorized to be Cut.					Dues and Fees.
	Free.	Paid.	Roof Poles, Fence Rails and Posts.	Saw Timber.	Mine Timber and Building Logs.	Green Fuel.	Dry Fuel.	
Sq. miles				Ft. B.M.	Lin. ft.	Cords.	Cords.	$ cts.
Turtle Mountain.... 109·25	129	15	610	14,000	360	.....	3,476	108 05
Spruce Woods..... 224·50	24	16	.....	.....	.....	.....	485	33 25
Riding Mountain.... 1,499·00	273	465	25,248	2,126,276	56,086	103	5,998	4,997 22
Duck Mountain..... 1,543 25	89	143	8,620	803,800	16,827	.....	3,118	1,706 33
Moose Mountain.... 156·00	49	93	5,277	.....	4,312	210	1,322	252 90
Beaver Hills..... 99·00	46	3	250	.....	3,200	.....	375	39·75
Porcupine..... 4,024·25	95	25	38,576	742,484	3,670	.....	1,228	807 75
Pasquia..... 2,615·00	24	40	8,926	174,555	13,250	400	4,038	1,456 95
Fort à la Corne..... 513·00	75	45	88,548	377,550	10,125	.....	1,818	166 80
Pines..... 166·15	29	32	10,090	39·750	4,945	12	1,020	172 85
Nisbet..... 149·49	49	55	38,100	111,000	245	.....	2,233	661 95
Big River..... 1,342·00	33	.....	27,100	95,750	1,600	.....	592	8 00
Steep Creek..... 7·00	16	13	6·365	24,500	210	.....	406	39 60
Keppel..... 86·25	168	69	29,465	1,300	71,600	397	1,965	185 00
Sturgeon..... 729·00	1	.....	2,900	9,250	.....	.....	25	0 25
Elbow..... 119·00	29	17	425	.....	500	6	255	18 25
Manito..... 179·65	42	35	27,006	.....	14,500	179	671	91 70
Dundurn..... 63·25	12	.....	.....	.....	.....	.....	300	3 00
Cypress Hills..... 178·50	288	130	95,166	29,000	113,555	153	2,252	421 97
Seward..... 30·75	.....	.....	.....	.....	.....	.....	.....	.....
Crowsnest..... 1,248·50	90	55	18,235	.....	129,456	.....	1,791	570 67
Bow River..... 3,123·00	27	19	10,235	.....	14,616	.....	561	116 50
Clearwater..... 4,877·00	24	7	.....	.....	10,500	.....	775	90 25
Brazeau..... 1,867 15	8	11	350	.....	121,400	.....	279	406 00
Cooking Lake..... 95·50	26	15	250	.....	12,180	.....	720	76·40
Athabaska..... 3,158·00	.....	.....	.....	.....	.....	.....	.....	.....
Lesser Slave..... 5,023·00	.....	.....	.....	.....	.....	.....	.....	.....
Total..... 33,226·44	1,646	1,303	441,743	4,549,215	603,137	1,460	35,703	12,431 39

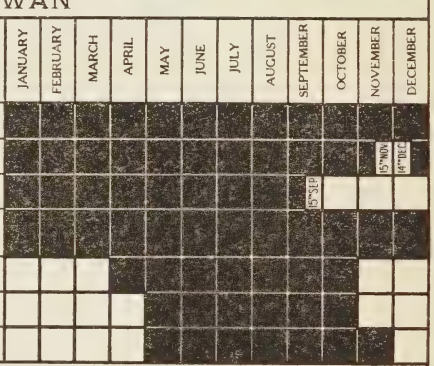
GAME LAWS 1918.

OPEN SEASON WHITE **CLOSED SEASON BLACK**

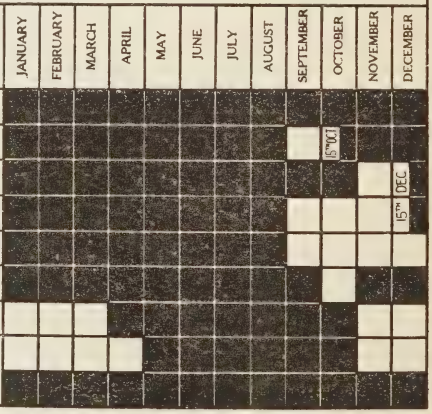
MANITOBA


BAG LIMIT— Deer, etc., one male adult only. Ptarmigan, 15 a day, total 50 for the season. Geese 10 a day. Ducks, 20 a day during the last fifteen days of September, 40 a day during remainder of open season. Penalties $10.00 to $500.00 or imprisonment.
JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER
One male only, Moose, Deer, Cabri or Antelope, Reindeer or Cariboo.
20TH NOV
Otter or Beaver south of the fifty-third parallel of north latitude.
Otter or Beaver north of the fifty-third parallel of north latitude.
Fisher or Pekan, Sable, Marten or Mink south of the fifty-third parallel of north latitude.
Mink, Marten, Fisher, Pekan or Sable north of the fifty-third parallel of north latitude.
Fox or Lynx north of the fifty-third parallel of north latitude.
Muskrats north of the fifty-first parallel of north latitude.
MAY
20TH OCT
Muskrats south of the fifty-first parallel of north latitude.
15TH
Bison or Buffalo, Elk or Wapiti, Female Deer or Fawns of Deer under one year of age, Grouse of any variety, Prairie Chicken or Partridge.
Swans, Mourning Dove, Wild Pigeon, Band Tailed Pigeon, Little Brown Crane, Sand Hill Crane, Whooping Crane, Quail or Curlew, Wood Duck, Eider Duck, Sandpiper, Pheasant and Hungarian Partridge before September 15th, 1927.
Brant, Wild Geese, Scoters or Wild Duck, Black Breasted and Golden Plover, Wilson or Jack Snipe, Woodcock and Yellow-legs.
15TH SEP
Ptarmigan.
20TH OCT

SASKATCHEWAN


BAG LIMIT — Big game, 1 Moose,1 Elk, 2 Deer, 2 Caribou, males only, but not more than two animals in all. Ducks and Geese, 50 a day, total 250 for season.
Penalty for violation of Law $10.00 to $1,000.00 or imprisonment.
JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER
Buffalo, Antelope, Female Deer, Fawns, Big Game Animals (south of township 35.)
Deer, Caribou, Moose, Elk (north of township 34.)
15TH NOV
14TH DEC
Ducks, Geese, Rails, Coots, Black Breasted and Golden Plover, Wilson or Jacksnipe, and Greater and Lesser Yellow-legs.
15TH SEP
Prairie Chicken, (Sharp-tailed Grouse and Pinnated Grouse), Ruffed Grouse or Partridge, Canada or Spruce Grouse, Sage Grouse, Cranes, Swans, Pelicans, Loons, Bitterns, Gulls, Terns, and Insectivorous Birds.
Mink, Fisher, Marten, Fox.
Otter, Muskrat.
Beaver (except on game preserves and where protected by municipality.)

ALBERTA


BAG LIMIT— Big game, adult male only. —2 Sheep, 2 Goats, 1 Caribou, 1 Moose, 1 Deer, 30 Ducks in one day, or 200 in the season. 10 Grouse, Partridge, Ptarmigan, and Prairie Chicken in one day or a total of 100 birds in a season. 5 Hungarian Partridge in one day or 25 in one season. Penalty $10.00 to $500.00 or imprisonment.
JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER
Buffalo, Elk, Antelope, Females of Deer Family, Fawns
Mountain Sheep or Goat.
15TH OCT
Caribou, Moose, Deer.
15TH DEC
Ducks, Geese, Black Bellied Plover, American Golden Plover, Wilson Snipe, Greater Yellow-legs and Yellow-legs.
Rails and Coots.
Grouse, Partridge, Ptarmigan, Prairie Chicken, Hungarian Partridge.
Mink, Fisher, Marten.
Otter, Muskrat.
All Birds except Crows, Eagles, Goshawks, Pigeon Hawks, Duck Hawks, Cooper's Hawks, Hawk Owls, Blackbirds, Grackles, English Sparrows, Loons, Cormorants, Pelicans and Magpies.

GAME

MANITOBA GAME LICENSE FEES, 1918.

Resident—	
Big Game	$ 4.00
Game Bird	1.00
Trappers	2.00
Fur Traders	10.00
Dog Trainers	10.00
Cold Storage	5.00
Non-Resident—	
Big Game	25.00
Game Birds	25.00
(Actually domiciled in British territory)	
Big Game	15.00
Game Birds	10.00
Dog Trainers	20.00
Trappers	100.00
(Actually domiciled within Canada)	
Trappers	25.00
Fur Traders	50.00

SASKATCHEWAN GAME LICENSE FEES. 1918.

Resident—	
Big Game	$ 5.00
(Domiciled in city, town, or village)	
Game Birds	1.25
Fur Dealer, North of Tp. 25	10.00
" " South of Tp. 26	2.00
Taxidermist	5.00
Non-Resident—	
Big Game	25.00
Game Birds	15.00
(Actually domiciled in Canada)	
Game Birds	5.00
Trappers	25.00
Fur Dealers	20.00

ALBERTA GAME LICENSE FEES, 1918.

Resident—	
Big Game	$ 2.50
" (farmers)	1.00
Game Birds	2.25
Camp helper	2.50
Guide	2.50
Non-Resident—	
General License	25.00
Game Birds	5.00
Trapper	25.00

NOTE.—The game laws are under the control of the Provincial Governments and are subject to change from season to season.

SALE OF GAME LICENSES IN MANITOBA FOR YEAR ENDING NOVEMBER 30, 1917.

Kind.	Number.	Revenue.
Big Game	4,719	$18,876
Game Bird	4,170	4,170
Non-resident (British subject)	41	615
Non-resident (other than British subject)	5	250
Resident Trappers	1,498	749
Non-resident Trappers	5	125
Resident Fur Traders, at $5	141	705
" " at $10	137	1,370
Non-resident Fur Traders	5	250
Dog Trainers	1	10
Non-resident Dog Trainers	5	100
Cold Storage	5	25

SALE OF GAME LICENSES IN SASKATCHEWAN FOR YEAR ENDING APRIL 30, 1918.

Kind.	Number.	Revenue.
		$
Resident bird game	9,090	9,090
Resident big game	2,250	10,125
Non-resident bird game (six days)	44	110
" " (season)	10	100
" big game	11	275
Taxidermist	15	75
Permits to export game	30	71
Fur dealers' licenses at $10 each	349	3,490
" " $ 2 each	62	124
Non-resident fur dealers' licenses	24	480
Fur dealers' travelling agents' permit	79	79
Permits for Private Game Reserves	10	10
Cold storage licenses	8	8

SALE OF GAME LICENSES IN ALBERTA FOR YEAR ENDING DECEMBER 31st, 1917.

Kind.	Number.	Revenue.
		$
General Game (non-resident)	40	1,000 00
Game Bird "	24	120 00
Resident Big Game	833	2,082 50
Resident Farmer Big Game	3,979	3,979 00
Resident Game Bird	6,477	14,573 25
Guide's	16	40 00
Camp Helper's	11	27 50
Game Dealer's	26	260 00
Market Hunter's	54	270 00
Permits to export	64	507 00
Trappers (non-resident)	5	125 00

CLIMATE*

TEMPERATURE AND PRECIPITATION IN MANITOBA, 1916.

Month.	——	Brandon.	Winnipeg.	Dauphin.	Grand Rapids.	Le Pas.
	Elevation in feet	1265·	760·	957·	810·	860·
JANUARY.	Temperature in degrees Fahrenheit—					
	Highest	18·	22·	25·	18·	21·
	Lowest	−51·	−41·	−40	−41·	−51·
	Mean	−13·	− 7·	− 6·	−11·	−16·
	Difference from average	−11·	− 4·	− 2·	.....	.....
	Precipitation in inches—					
	Total	2·70	3·36	1·	1·15	·23
	Difference from average	+1·87	+2·39	.....	.....	.....
	Sunshine in hours—					
	Total number	99·	90·	.....	.....	77·
	Difference from average	−11·	−20·	.....	.....	.....
	Possible number	267·	266·	.....	.....	250·
	Number of days of hail	0·	0·	0·	0·	0·
	Number of days below 32°	31·	31·	31·	31·	31·
APRIL.	Temperature in degrees Fahrenheit—					
	Highest	65·	66·	72·	69·	69·
	Lowest	− 1·	28·	7·	− 9·	−12·
	Mean	35·	37·	41·	33·	33·
	Difference from average	− 3·	0·	+ 3·	.....	.....
	Precipitation in inches—					
	Total	·92	·30	.....	·54	·20
	Difference from average	+ ·17	− 1·18	.....	.....	.....
	Sunshine in hours—					
	Total number	175·	213·	.....	.....	238·
	Difference from average	−16·	+ 6·	.....	.....	.....
	Possible number	412·	412·	.....	.....	420·
	Number of days of hail	0·	0·	0·	0·	0·
	Number of days below 32°	23·	16·	15·	25·	22·
MAY.	Temperature in degrees Fahrenheit—					
	Highest	78·	75·	80·	63·	66·
	Lowest	20·	7·	21·	20·	17·
	Mean	49·	50·	50·	41·	44·
	Difference from average	0·	− 1·	− 2·	.....	.....
	Precipitation in inches—					
	Total	1·59	2·47	2·10	5·08	5·40
	Difference from average	+ 0·29	+ 0·46	− 0·23	.....	.....
	Sunshine in hours—					
	Total number	187·	220·	.....	.....	184·
	Difference from average	−41·	−31·	.....	.....	.....
	Possible number	476·	476·	.....	.....	493·
	Number of days of hail	0·	0·	0·	0·	0·
	Number of days below 32°	9·	7·	5·	20·	7·

*Compiled from information furnished by the Meteorological Service of Canada.

Month.	——	Brandon.	Winnipeg.	Dauphin.	Grand Rapids.	Le Pas.
JUNE.	Temperature in degrees Fahrenheit—					
	Highest	80·	80·	80·	83·	78·
	Lowest	30·	34·	33·	28·	32·
	Mean	56·	58·	57·	54·	56·
	Difference from average	−5·	−4·	−4·	.....	.....
	Precipitation in inches—					
	Total	4·33	4·12	5·38	4·83	1·96
	Difference from average	+1·30	+0·68	+2·99	.....	.....
	Sunshine in hours—					
	Total number	190·	232·	.....	.....	249·
	Difference from average	−30·	−18·	.....	.....	.....
	Possible number	486·	486·	.....	.....	509·
	Number of days of hail	0·	1·	0·	0·	0·
	Number of days below 32°	1·	0·	0·	1·	1·
JULY.	Temperature in degrees Fahrenheit—					
	Highest	92·	95·	88·	89·	87·
	Lowest	37·	48·	45·	45·	52·
	Mean	69·	70·	70·	68·	69·
	Difference from average	+7·	+6·	+6·	.....	.....
	Precipitation in inches—					
	Total	2·63	2·84	1·64	1·99	1·39
	Difference from average	+0·30	+0·17	−1·69	.....	.....
	Sunshine in hours—					
	Total number	259·	311·	.....	.....	322·
	Difference from average	−18·	+21·	.....	.....	.....
	Possible number	488·	488·	.....	.....	509·
	Number of days of hail	0·	0·	0·	0·	0·
	Number of days below 32°	0·	0·	0·	0·	0·
AUGUST.	Temperature in degrees Fahrenheit—					
	Highest	97·	93·	96·	88·	86·
	Lowest	34·	38·	34·	35·	38·
	Mean	62·	65·	64·	62·	62·
	Difference from average	0·	+2·	+2·	.....	.....
	Precipitation in inches—					
	Total	2·22	2·35	1·03	1·62	3·20
	Difference from average	+0·33	−0·09	−1·42	.....	.....
	Sunshine in hours—					
	Total number	261·	278·	.....	.....	306·
	Difference from average	+11·	+21·	.....	.....	.....
	Possible number	445·	444·	.....	.....	455·
	Number of days of hail	0·	0·	0·	1·	2·
	Number of days below 32°	0·	0·	0·	0·	0·

Month.	——	Brandon.	Winnipeg.	Dauphin.	Grand Rapids.	Le Pas.
SEPTEMBER.	Temperature in degrees Fahrenheit—					
	Highest	82·	79·	75·	76·	72·
	Lowest	22·	27·	26·	28·	29·
	Mean	52·	54·	52·	50·	50·
	Difference from average	−2·	0·	−1·	.....	.....
	Precipitation in inches—					
	Total	2·39	2·03	1·68	5·08	2·02
	Difference from average	+1·17	+0·11	−0·78	.....	.....
	Sunshine in hours—					
	Total number	177·	172·	.....	.....	162·
	Difference from average	−5·	−8·	.....	.....	.....
	Possible number	377·	377·	.....	.....	379·
	Number of days of hail	1·	0·	1·	0·	0·
	Number of days below 32°	7·	5·	5·	7·	4·

TEMPERATURE AND PRECIPITATION IN SASKATCHEWAN, 1916.

		Saskatoon	Prince Albert.	Battle-ford.	Swift Current.	Regina.	Kamsack.
Elevation in feet		1,571·	1,414·	1,622·	2,432·	1,885·	1,445·
JANUARY.	Temperature in degrees Fahr:—						
	Highest	17·	17·	20·	27·	13·	27·
	Lowest	−15·	−58·	−61·	−49·	−53·	−56·
	Mean	−16·	−15·	−16·	−12·	−15·	−23·
	Difference from average	−18·	−12·	−14·	−21·	−11·	.....
	Precipitation in inches—						
	Total	0·55	0·96	0·76	2·70	1·15	0·20
	Difference from average	+0·06	+0·09	+0·30	+2·04	+0·78	.....
	Sunshine in hours—						
	Total number	71·	.....	71·	56·	.....	.....
	Difference from average	.....	.....	−34·	.....	.....	.....
	Possible number	256·	.....	254·	.....	.....	.....
	Number of days of hail	0·	0·	0·	0·	0·	0·
	Number of days below 32°	31·	31·	31·	31·	31·	31·
APRIL.	Temperature in degrees Fahr:—						
	Highest	74·	75·	76·	80·	72·	71·
	Lowest	14·	2·	15·	18·	2·	−1·
	Mean	38·	38·	40·	41·	36·	35·
	Difference from average	+1·	+1·	+2·	+0·	−1·	.....
	Precipitation in inches—						
	Total	0·64	1·21	0·73	0·62	0·56	0·15
	Difference from average	+0·27	+0·38	+0·32	−0·13	−0·17	.....
	Sunshine in hours—						
	Total number	204·	.....	.....	197·	.....	.....
	Difference from average	.....	.....	.....	.....	.....	.....
	Possible number	417·	.....	418·	413·	.....	.....
	Number of days of hail	0·	1·	0·	0·	0·	0·
	Number of days below 32°	19·	19·	18·	23·	20·	21·

Month.	——	Saskatoon	Prince Albert.	Battle-ford.	Swift Current.	Regina.	Kamsack.
MAY.	Temperature in degrees Fahr.—						
	Highest	78·	78·	77·	79·	77·	75·
	Lowest	19·	20·	21·	23·	20·	24·
	Mean	47·	48·	48·	48·	48·	47·
	Difference from average	−3·	−1·	−4·	−3·	−2·	.....
	Precipitation in inches—						
	Total	2·45	4·38	2·77	1·59	1·89	2·21
	Difference from average	+0·86	+2·84	+1·08	−0·53	−0·09	.....
	Sunshine in hours—						
	Total number	198·	.....	.....	210·	.....	.....
	Difference from average	.....	.....	.....	.....	.....	.....
	Possible number	486·	.....	488·	478·	.....	.....
	Number of days of hail	0·	0·	0·	0·	0·	0·
	Number of days below 32°	7·	3·	8·	9·	8·	9·
JUNE.	Temperature in degrees Fahr.—						
	Highest	78·	77·	78·	79·	79·	77·
	Lowest	32·	30·	32·	28·	35·	28·
	Mean	56·	56·	57·	56·	55·	54·
	Difference from average	− 2·	− 1·	− 2·	− 4·	− 4·	.....
	Precipitation in inches—						
	Total	1·68	2·60	3·66	4·05	4·28	2·29
	Difference from average	− 0·83	− 0·03	+ 0·19	+ 1·00	+ 1·11	.....
	Sunshine in hours—						
	Total number	250·	.....	.....	230·	.....	.....
	Difference from average	.....	.....	.....	.....	.....	.....
	Possible number	498·	.....	501·	488·	.....	.....
	Number of days of hail	0·	0·	0·	1·	0·	0·
	Number of days below 32°	1·	1·	1·	1·	0·	2·
JULY.	Temperature in degrees Fahr.—						
	Highest	90·	86·	89·	91·	89·	87·
	Lowest	48·	46·	47·	44·	42·	38·
	Mean	66·	66·	66·	67·	68·	67·
	Difference from average	+ 3·	+ 4·	+ 2·	+ 1·	+ 4·	.....
	Precipitation in inches—						
	Total	4·79	3·88	2·11	5·29	5·02	1·13
	Difference from average	+ 2·25	+ 1·46	0·00	+ 2·78	+ 2·53	.....
	Sunshine in hours—						
	Total number	304·	.....	.....	335·	.....	.....
	Difference from average	.....	.....	.....	.....	.....	.....
	Possible number	502·	.....	503·	491·	.....	.....
	Number of days of hail	0·	0·	0·	0·	0·	0·
	Number of days below 32°	0·	0·	0·	0·	0·	0·

Month.	——	Saskatoon	Prince Albert.	Battle-ford.	Swift Current.	Regina.	Kamsack
AUGUST.	Temperature in degrees Fahr.—						
	Highest	83·	85·	84·	88·	87·	95·
	Lowest	37·	30·	34·	32·	34·	24·
	Mean	59·	60·	60·	61·	61·	59·
	Difference from average	− 1·	+ 1·	− 2·	− 3·	0·	.....
	Precipitation in inches—						
	Total	1·99	1·66	4·70	2·54	0·69	0·58
	Difference from average	− 0·18	− 0·87	+ 2·72	+ 0·65	− 1·17	.....
	Sunshine in hours—						
	Total number	288·	.....	.....	302·	.....	.....
	Difference from average	.....	.....	.....	.....	.....	.....
	Possible number	452·	.....	452·	446·	.....	.....
	Number of days of hail	1·	1·	0·	1·	0·	0·
	Number of days below 32°	0·	1·	0·	1·	0·	4·
SEPTEMBER.	Temperature in degrees Fahr.—						
	Highest	78·	80·	81·	81·	80·	80·
	Lowest	24·	26·	23·	25·	26·	19·
	Mean	49·	51·	52·	53·	50·	47·
	Difference from average	− 1·	+ 2·	0·	0·	− 1·	.....
	Precipitation in inches—						
	Total	1·38	1·00	1·05	1·46	4·14	3·21
	Difference from average	− 0·08	− 0·44	− 0·21	+ 0·13	+ 2·95	.....
	Sunshine in hours—						
	Total number	178·	.....	.....	165·	.....	.....
	Difference from average	.....	.....	.....	.....	.....	.....
	Possible number	378·	.....	378·	377·	.....	.....
	Number of days of hail	0·	0·	0·	1·	0·	0·
	Number of days below 32°	11·	7·	3·	1·	8·	12·

TEMPERATURE AND PRECIPITATION IN ALBERTA. 1916

	——	Fort Vermi-lion.	Grande Prairie.	Atha-baska	Edmon-ton.	Calgary.
	Elevation in feet	900·	1350·	1650·	2158·	3428·
JANUARY.	Temperature in degrees Fahrenheit—					
	Highest	22·	26·	32·	29·	36·
	Lowest	−60·	−48·	−58·	−45·	−41·
	Mean	−20·	−15·	−17·	−13·	− 8·
	Difference from average	− 9·	.....	−13·	−21·	−21·
	Precipitation in inches—					
	Total	0·40	1·20	1·08	1·09	0·79
	Difference from average	−0·07	.....	+0·41	+0·38	+0·33
	Sunshine in hours—					
	Total number	84·	.....	.....	91·	.....
	Difference from average	.....	.....	.....	+12·	.....
	Possible number	218·	.....	.....	250·	.....
	Number of days of hail	0·	0·	0·	0·	0·
	Number of days below 32°	31·	31·	31·	31·	31·

Month.	——	Fort Vermilion.	Grande Prairie.	Athabaska.	Edmonton.	Calgary.
APRIL.	Temperature in degrees Fahrenheit—					
	Highest	62·	62·	69·	70·	76·
	Lowest	2·	21·	5·	17·	22·
	Mean	36·	40·	39·	42·	43·
	Difference from average	+4·	.....	+1·	+1·	+3·
	Precipitation in inches—					
	Total	0·09·	1·31·	0·54·	1·17·	0·85·
	Difference from average	.....	.....	−0·30·	−0·61·	+0·22·
	Sunshine in hours—					
	Total number	247·	.....	.....	219·	.....
	Difference from average	.....	.....	.....	+7·	.....
	Possible number	431·	.....	.....	419·	.....
	Number of days of hail	0·	0·	0·	0·	0·
	Number of days below 32°	28·	20·	19·	21·	23·
MAY.	Temperature in degrees Fahrenheit—					
	Highest	80·	73·	77·	75·	74·
	Lowest	25·	26·	24·	24·	23·
	Mean	48·	48·	46·	49·	46·
	Difference from average	0·	.....	−4·	−2·	−3·
	Precipitation in inches—					
	Total	0·60·	0·22·	1·16·	1·77·	3·10·
	Difference from average	0·24·	.....	−0·51·	+0·01·	+0·62·
	Sunshine in hours—					
	Total number	275·	.....	.....	230·	.....
	Difference from average	.....	.....	.....	+8·	.....
	Possible number	519·	.....	.....	492·	.....
	Number of days of hail	2·	0·	0·	3·	0·
	Number of days below 32°	17·	8·	14·	9·	8·
JUNE.	Temperature in degrees Fahrenheit—					
	Highest	87·	82·	79·	77·	82·
	Lowest	30·	25·	28·	29·	34·
	Mean	59·	57·	54·	56·	56·
	Difference from average	+2·	.....	−2·	−1·	+1·
	Precipitation in inches—					
	Total	2·05·	0·41·	0·85·	2·62·	1·46·
	Difference from average	+0·38·	.....	−2·71·	−0·79·	−1·81·
	Sunshine in hours—					
	Total number	368·	.....	.....	264·	.....
	Difference from average	.....	.....	.....	+24·	.....
	Possible number	543·	.....	.....	506·	.....
	Number of days of hail	0·	0·	0·	1·	0·
	Number of days below 32°	3·	1·	5·	1·	0·

Month.	——	Fort Vermilion.	Grande Prairie.	Athabaska.	Edmonton.	Calgary.
JULY.	Temperature in degrees Fahrenheit—					
	Highest	88·	97·	.....	80·	87·
	Lowest	33·	34·	.....	38·	38·
	Mean	58·	56·	.....	60·	62·
	Difference from average	−2·	.....	.....	−1·	+2·
	Precipitation in inches—					
	Total	4·04·	3·98·	.....	3·31·	1·49·
	Difference from average	+2·44·	.....	.....	−0·44·	−1·11·
	Sunshine in hours—					
	Total number	270·	.....	.....	248·	.....
	Difference from average	.....	.....	.....	−25·	.....
	Possible number	540·	.....	.....	508·	.....
	Number of days of hail	0·	0·	.....	1·	1·
	Number of days below 32°	0·	0·	.....	0·	0·
AUGUST.	Temperature in degrees Fahrenheit—					
	Highest	83·	84·	84·	81·	85·
	Lowest	24·	27·	27·	32·	39·
	Mean	54·	56·	58·	58·	60·
	Difference from average	−4·	.....	+2·	−1·	+1·
	Precipitation in inches—					
	Total number	0·42·	0·47·	0·69·	3·70·	2·03·
	Difference from average	1·15·	.....	−1·15·	+1·65·	−0·49·
	Sunshine in hours—					
	Total number	318·	.....	.....	237·	.....
	Difference from average	.....	.....	.....	−19·	.....
	Possible number	473·	.....	.....	455·	.....
	Number of days of hail	0·	0·	0·	0·	0·
	Number of days below 32°	6·	2·	2·	1·	0·
SEPTEMBER.	Temperature in degrees Fahrenheit—					
	Highest	78·	78·	79·	79·	80·
	Lowest	23·	27·	21·	29·	23·
	Mean	46·	49·	49·	51·	52·
	Difference from average	0·	.....	+2·	+1·	+1·
	Precipitation in inches—					
	Total number	1·56·	0·52·	2·51·	2·80·	0·84·
	Difference from average	+0·15·	.....	+1·37·	+1·33·	−0·40·
	Sunshine in hours—					
	Total number	196·	.....	.....	175·	.....
	Difference from average	.....	.....	.....	−9·	.....
	Possible number	382·	.....	.....	379·	.....
	Number of days of hail	0·	0·	0·	1·	·
	Number of days below 32°	15·	5·	11·	3·	2·

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